

Remarks

Applicants respectfully request reconsideration of this application as amended. Claims 1-9, 11, 13, 15, 18 and 19 have been amended. No claims have been cancelled. Therefore, claims 1-20 are presented for examination.

Claims 1, 2, 17 and 18 stand rejected under 35 U.S.C. §103 as being unpatentable over Collins et al. (U.S. Patent No. 5,764,953) in view of Williams (U.S. Patent No. 5,764,852). Applicant submits that the present claims are patentable over Collins in view of Williams.

Collins discloses a system for integrating active and simulated decision making processes. The system includes a storage device storing a representation of a domain model, a decision making module, a real-time system interface, a simulated event generator module, and an event processor module. The domain model contained in the storage device represents a decision making domain. The decision making domain is defined by a plurality of diverse object sets and a relational set defining relationships between one or more of the objects in the diverse object sets. The domain model contains a first object set defined by a plurality of resource providers, a second object set defined by a plurality of resource requests, and a relational assignment set representing the assignment of one or more resource requests among individual resource providers. The assignment set includes a schedule set further defined by schedules of the resource requests assigned to each resource provider. See Collins at col. 3, ll. 66 – col. 4, ll. 30. The event processor module receives real-time domain events during the real-time mode of operation, and receives simulated domain events during the simulation mode (col. 5, ll. 40-45). Real-time events represent an actual change to one of the diverse object sets, while simulated events represent a simulated change to one of the diverse object sets.

Williams discloses a multimedia data processing system, which includes a plurality of multimedia end devices, which are electrically connected to a computer. The plurality of

multimedia end devices include all types of multimedia end devices which either produce or consume real-time and/or asynchronous streamed data. See Williams at col. 3, ll. 10-25. A microphone may be used to receive analog input signals corresponding to ambient sounds. The real-time analog data stream may be directed to the computer, converted into digital form, and subject to manipulation by the multimedia application software, such as a voice recognition program col. 3, ll. 43-48

Claim 1 of the present application recites receiving real-time analog data at a personal computer implementing a general-purpose operating system and generating a real-time interrupt indicating a request to process the real time data at a central processing unit (CPU). Applicant submits that neither Collins nor Williams disclose or suggest generating a real-time interrupt indicating a request to process the real time data at a CPU. Collins discloses generating real time events. However, such events are not equivalent to interrupts. Instead, the event represents an actual change to a diverse object set, which may be defined by a plurality of resource providers, or a plurality of resource requests. Moreover, there is nothing disclosed or suggested in Williams that could be considered generating a real-time interrupt indicating a request to process the real time data at a CPU.

Since neither Collins nor Williams disclose or suggest generating a real-time interrupt indicating a request to process the real time data at a CPU, any combination of Collins and Williams would also not disclose or suggest such a feature. Therefore, claim 1 is patentable over Collins in view of Williams.

Claims 2-6, 17 and 18 depend from claim 1 and include additional features. Therefore, claims 2-6 are also patentable over Collins.

Claim 7 recites a central processing unit (CPU) coupled to a bus to generate a real-time interrupt upon receiving real-time analog data and to process data associated with the real-time interrupt if the real-time interrupt has a higher priority than a non-real-time operation currently being processed.

Thus, for the reasons described above with respect to claim 1, claim 7 is also patentable over Collins. Because claims 8-12, 19 and 20 depend from claim 7 and include additional features, claims 8-12, 19 and 20 are also patentable over Collins in view of Williams.

Claim 13 recites an event handler coupled to the event mechanism to process data associated with the real-time interrupts received from the event mechanism upon determining the relative priority between the real-time interrupts and non-real-time operations being processed. Thus, for the reasons described above with respect to claim 1, claim 13 is also patentable over Collins in view of Williams. In addition, claim 13 is patentable over Collins in view of Williams because neither Collins nor Williams disclose or suggest an event mechanism to generate real time events in response to receiving timing signals and determining that real-time data is stored within a register. Since claims 14-17 depend from claim 13 and include additional features, claims 14-17 are also patentable over Collins in view of Williams.

Claims 3-6 stand rejected under 35 U.S.C. §103 as being unpatentable Collins in view of Williams and further in view of Mays et al. (U.S. Patent No. 6,035,321). Applicant submits that the present claims are patentable over Collins and Williams even in view of Mays.

Mays discloses a kernel for enforcing a hierarchical invocation structure that prevents upcalls by executing kernel operations during each invocation of code unit of application by another code unit. Kernel operations determine the priority of the invoking unit of code based on the hierarchy of the invocation structure. Only invocations by either lower priority units, or the unit itself are allowed. Once invoked, the kernel operates to establish a priority for the invoked task. The kernel provides various event mechanisms to provide for priority based preemption concurrently with the enforced invocation structure, thus allowing the handling of asynchronous events in a multitasking environment. The event mechanisms allow a unit of code to signal the occurrence of a condition, which may be captured by other

code units. The kernel determines the proper code unit for responding to the condition, and employs scope rules to further define the handling operation. Scheduling and tasking mechanisms schedule the handling of the condition and dispatch the handling of the event on a prioritized basis. See Mays at Abstract.

Nevertheless, Mays does not disclose or suggest generating a real-time interrupt indicating a request to process the real time data at a CPU. As discussed above, Collins and Williams do not disclose or suggest generating a real-time interrupt indicating a request to process the real time data at a CPU. Thus, any combination of Collins, Williams and Mays would also not disclose or suggest such a feature. Consequently, the present claims are patentable over Collins in view of Collins and further in view of Mays.

Claims 7-16, 19 and 20 stand rejected under 35 U.S.C. §103 as being unpatentable Collins in view of Williams further in view of Mays, further in view of Matsui et al. (U.S. Patent No. 5,774,701). Applicant submits that the present claims are patentable over Collins, Williams and Mays even in view of Matsui.

Matsui discloses a microprocessor that operates at high and low clock frequencies. See Matsui at col. 2, ll. 23-30. However, Matsui does not disclose or suggest generating a real-time interrupt indicating a request to process the real time data at a CPU.

As discussed above, Collins, Williams and Mays do not disclose or suggest generating a real-time interrupt indicating a request to process the real time data at a CPU. Thus, any combination of Collins, Williams, Mays and Matsui would also not disclose such a feature. Accordingly, the present claims are patentable over Collins in view of Mays, and further in view of Matsui.

Applicant respectfully submits that the rejections have been overcome, and that the claims are in condition for allowance. Accordingly, applicant respectfully requests the rejections be withdrawn and the claims be allowed.


The Examiner is requested to call the undersigned at (303) 740-1980 if there remains any issue with allowance of the case.

Please charge any shortage to our Deposit Account No. 02-2666.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

Date: April 13, 2004



Mark L. Watson
Reg. No. 46,322

12400 Wilshire Boulevard
7th Floor
Los Angeles, California 90025-1026
(303) 740-1980